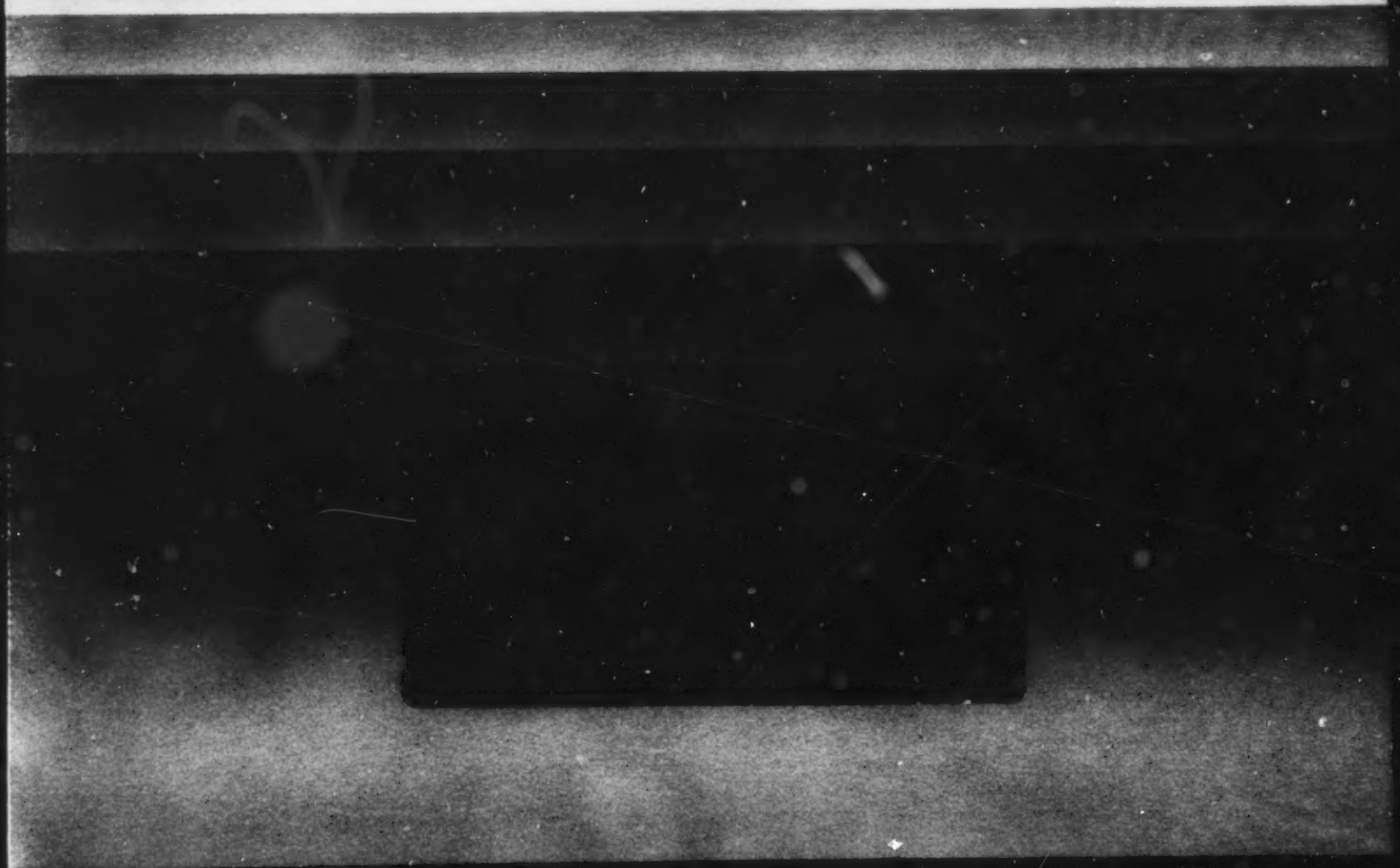
Environment Canada
Conservation and Protection

Environnement Canada
Conservation et protection

National Hydrology Research Institute
Institut national de recherche en hydrologie



Inland Waters Directorate
Saskatoon, Saskatchewan, Canada
Direction générale des eaux intérieures
Saskatoon, Saskatchewan, Canada

Canada

92-07057/

ISSN 0838-1992

C.S.L. Ommanney

Hydrological Sciences Division
National Hydrology Research Institute
Environment Canada
Saskatoon, Saskatchewan
S7N 3H5

PERMAFROST IN CANADA
REFERENCES (1988-1990)
AND RECENT WORK

NHRI Contribution No.90053

August, 1990

MANAGEMENT PERSPECTIVE

The establishment of a national or international focus for hydrology at the National Hydrology Research Institute means that staff there accept positions with national and international bodies. One appropriate activity is that of Canadian national correspondent for one of the commissions of the International Association of Hydrological Sciences. Simon Ommanney is the National Correspondent for the International Commission on Snov and Ice. One of his roles is to prepare an annual report on snov and ice research in Canada for publication in the Canadian Geophysical Bulletin. This report contains a bibliography and other background information for the 1989 report (CS-90054).

PERSPECTIVE DE GESTION

L'établissement à l'Institut national de recherche en hydrologie d'un groupe national ou international de recherche spécialisée en hydrologie signifie que les employés de l'Institut sont prêts à accepter des postes dans des organismes nationaux ou internationaux. Une activité appropriée est celle du correspondant canadien pour l'une des commissions de l'Association internationale des sciences hydrologiques. Simon Ommanney est le correspondant national pour la Commission internationale de la neige et de la glace. L'un de ses rôles consiste à préparer un rapport annuel sur la recherche en matière de neige et de glace au Canada pour publication dans le Bulletin canadien de géophysique. Le présent rapport contien une bibliographie et des renseignements supplémentaires pour celui de 1989 (CS-90054).

FOREWORD

As Canadian Correspondent to the International Commission on Snow and Ice (ICSI), C.S.L. Ommanney is responsible for preparing annual reports on permafrost and ground-ice investigations in Canada for the Associate Committee on Hydrology and their review of current activities for the Canadian Geophysical Bulletin. This report complements that review. It summarises references to work done in Canada, on Canadian permafrost and ground ice, and by Canadian glaciologists; published between 1988 and 1990. The listing includes unpublished reports and newspaper articles. The scientific articles reflect the activity of university, government and private sector scientists in different parts of the country.

As this is only a preliminary listing, readers are asked to advise the compiler of any errors or omissions. Many of the references have not been verified and some of these may not in fact deal with Canadian permafrost or may not be authored by Canadians.

The Appendix contains copies of the data sheets submitted to the ICSI Correspondent from glaciologists across Canada in response to a request from the Associate Committee of Hydrology for input to the Canadian Geophysical Bulletin. These sheets contain information on completed, current and future work together with contact names and numbers.

As background information for the ICSI report, other companion reports have been prepared on Snow (CS-90050), Glaciers (CS-90051), and Floating Ice (CS-90052). These are available on request from the National Hydrology Research Institute.

ALLAN, C., S. SCHIFF, D. PIERSON, M. ENGLISH, M. ECCLESTONE and W.P. ADAMS, 1988. Solifluction and its influence on vegetation and stream water chemistry in small permafrost basins, Axel Heiberg Island, N.W.T. In - Student Research in Canada's North, Proceedings of the National Student Conference on Northern Studies, W. Peter Adams and Peter G. Johnson (Editors), 18-19 November 1986, Ottawa, Ontario, Association of Canadian Universities for Northern Studies, 239-252

ALLARD, M., 1988. The coastal geomorphology of a macro-tidal and periglacial environment: southeastern Ungava Bay. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 42

ALLARD, M., J.A. PILON et R. LÉVESQUE, 1990. Exemples d'utilisation du géoradar en milieu de pergélisol dans le Nunavik. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

ALLARD, M., M.-K. SEGUIN et Y. BEGIN, 1989. Morphologie et régime thermique d'un plateau de pergélisol côtier, détroit de Manitounuk, Québec nordique. Recueil des résumés de communications, 57e congrès de l'Association canadienne française pour l'avancement des sciences, 15-19 mai 1989, Montréal, Québec, Annales de l'ACFAS, Vol.57, 176

ALLARD, M., M.-K. SEGUIN, R. LÉVESQUE, J. PILON and Y. MOISAN, 1989. Quaternary geology and ground ice in northern Quebec. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A76

ALLARD, M., M.K. SEGUIN and Y. PELLETIER, 1988. Shoreline permafrost in Kangiqsualujjuaq Bay, Ungava, Québec. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 113-118

ALLEN, D.M., 1988. The permafrost regime in the Mackenzie Delta - Beaufort Sea region, N.W.T. and its paleoclimatic implications. M.Sc. thesis, Department of Geography, Carleton University, Ottawa, Ontario, 173 pp.

ALLEN, D., F. MICHEL and A. JUDGE, 1988. Paleoclimate and permafrost in the Mackenzie Delta. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 33-38

ALLEN, D., F. MICHEL and A. JUDGE, 1988. The permafrost regime in the Mackenzie Delta, Beaufort Sea region, N.W.T. and its significance to the reconstruction of the palaeoclimatic history. In - Periglacial Phenomena: Ancient and Modern, H.M. French and A.E. Koster (Editors), IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 3-13

ANDERSON, S., 1989. Mining on top of the world at Polaris. Canadian Mining Journal, June, 76-83

ARCTIC INSTITUTE OF NORTH AMERICA, 1988. Research Associates report. Annual Report 1988, The Arctic Institute of North America of the University of Calgary, Calgary, Alberta, 14-17

ASSOCIATION OF CANADIAN UNIVERSITIES FOR NORTHERN STUDIES, 1988. Graduate studies opportunities in Canada/France ground-freezing project. Northline, 8(2), April, 5

BAKER, T.H.W., L.E. GOODRICH, G.H. JOHNSTON and J.C. PLUNKETT, 1990. Thermal performance of three building foundations at Alert, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BAKER, T.H.W., L.E. GOODRICH, A.J. HANNA and A.R. PICK, 1990. Thermal performance of wood chip insulation on permafrost slopes along the Normal Wells Pipeline. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BARSCH, D., 1988. Rockglaciers. In - Advances in Periglacial Hydrology, M.J. Clark (editor), Wiley-Interscience Publications, John Wiley & Sons, 69-90

BÉLANGER, J.R. and S.R. DALLIMORE, 1990. Applications of thematic mapper thermal-infrared imagery for permafrost and terrain studies, Richards Island, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BÉLANGER, J.R., S.R. DALLIMORE and P.A. EGGINTON, 1990. Applications of thematic mapper thermal-infrared imagery for permafrost and terrain studies, Richards Island, N.W.T. Proceedings, 1st Circumpolar Symposium on Remote Sensing of Arctic Environments, 1-3 May 1990, Yellowknife, N.W.T., **-**

BEN-MILOUD, R. and M.K.- SEGUIN, 1990. Stratigraphy, distribution of active layer and discontinuous permafrost in a hydrological basin, Northern Quebec. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BEN-MILOUD, K., M.K.- SEGUIN and J. STEIN, 1989. Water-table fluctuations in a basin underlain by discontinuous permafrost, northern Quebec. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A14

BENMOKRANE, B., P.-C. AITCIN, G. BALLIVY et P. HERNANDEZ, 1990. Scellement d'angrages à base de ciment portland dans les massifs rocheux soumis à l'action du gel. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

BENNETT, L., 1988. A first approximation of frozen soil creep, Melville Island, Arctic Canada. In - Student Research in Canada's North, Proceedings of the National Student Conference on Northern Studies, W. Peter Adams and Peter G. Johnson (Editors), 18-19 November 1986, Ottawa, Ontario, Association of Canadian Universities for Northern Studies, 35-39

BENNETT, L., 1988. Observations on near-surface creep in permafrost, eastern Melville Island, Arctic Canada. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 50

BENNETT, L.P. and H.M. FRENCH, 1988. Observations on near-surface creep in permafrost, eastern Melville Island, Arctic Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 683-688

BENNETT, L.P. and H.M. FRENCH, 1990. Measurement of in-situ permafrost creep, Melville Island, Arctic Canada, and implications for global change. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BIGGAR, K.W. and D.C. SEGO, 1990. The curing and strength characteristic of cold setting ciment fondu grout. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BLASCO, S.M., 1989. Origin and history of ice-bearing sediments in the shallow stratigraphy of the Canadian Beaufort Shelf. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A60

BLASCO, S.M., M.J. O'CONNOR, G. FORTIN and J. LEWIS, 1990. Depositional controls on the distribution of shallow ice-bearing sediments on the Canadian Beaufort Continental Shelf. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BLISS, L.C. and N.E. GRULKE, 1988. Revegetation in the High Arctic: its role in reclamation of surface disturbance. In - Northern Environmental Disturbances, P. Kershaw (Editor), Occasional Publication No.24, Boreal Institute for Northern Studies, Edmonton, Alberta, 43-55

BLUMSTENGEL, W.K. O. COOK, S.A. HARRIS, R.H. KROUSE and G. WHITLEY, 1990. Comparison of the characteristics of the discharge from an active near-slope rock glacier and glacial outwash. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BLUMSTENGEL, W. and S.A. HARRIS, 1988. Observations on an active lobate rock glacier, Slims River Valley, St. Elias Range, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 689-694

BOARDMAN, J., 1989. Periglacial geomorphology. Progress in Physical Geography, 13(2), June, 295-300

BRENNAN, A.M., 1988. Premafrost bibliography update, 1983-1987. Glaciological Data No.21, World Data Center for Glaciology (Snow and Ice), Boulder, Colorado, April, 225 pp.

BURGESS, M.M., 1988. Norman Wells pipeline permafrost and terrain monitoring: geothermal and geomorphic observations. Proceedings, 41st Canadian Geotechnical Conference, Canadian Geotechnical Society, 354-363

BURGESS, M.M., 1988. Permafrost and terrain preliminary monitoring results, Norman Wells pipeline, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 916-921

BURGESS, M.M., 1989. Permafrost and terrain monitoring in response to development and climate change, Norman Wells pipeline, Canada. In - Global Environmental Change and the Arctic, Abstracts of the 18th Annual Arctic Workshop, 13-15 April 1989, Department of Geography, University of Lethbridge, Lethbridge, Alberta, unpaginated, 1 pp.

BURGESS, M.M. and D.W. RISEBOROUGH, 1989. Measurement frequency for permafrost ground temperature monitoring: analysis of Norman Wells pipeline data, Northwest Territories and Alberta. In - Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.89-1D, Ottawa, Ontario, 69-75

BURGESS, M.M. and D.W. RISEBOROUGH, 1990. Observations on the thermal response of discontinuous permafrost terrain to development and climate change - an 800 km transect along the Norman Wells pipeline. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BURN, C.R., 1989. Frost heave of subaqueous lake-bottom sediments, Mackenzie Delta, Northwest Territories. In - Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.89-1D, Ottawa, Ontario, 85-93

BURN, C.R., 1989. Investigation of snowmelt infiltration into frozen soil, at sites near Mayo, central Yukon Territory. NHRI Contract Report No.89002, Contract No.KW504-7-0317-A, Department of Geography, University of British Columbia, Vancouver, British Columbia for Hydrology Division, National Hydrology Research Institute, Environment Canada, Saskatoon, Saskatchewan, 20 March, 70 pp.

BURN, C.R., 1990. Frost heave of subaqueous lake-bottom sediments, Mackenzie Delta, Northwest Territories. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BURN, C.R., 1990. Implications for palaeoenvironmental reconstruction of recent ice-wedge development at Mayo, Yukon Territory. Permafrost and Periglacial Processes, 1(1), 3-14

BURN, C.R., 1988. The development of near-surface ground ice during the Holocene at sites near Mayo, Yukon Territory, Canada. In - Periglacial Phenomena: Ancient and Modern, H.M. French and A.E. Koster (Editors), IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 31-38. Reprint Series No.98, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

BURN, C.R., 1988. Implications for palaeoenvironmental reconstruction of active ice-wedge development at Mayo, Yukon Territory. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 56

BURN, C.R. and P.A. FRIELE, 1989. Geomorphology, vegetation succession, soil characteristics and permafrost in retrogressive thaw slumps near Mayo, Yukon Territory. Arctic, 42(1), March, 31-40

BURN, C.R. and F.A. MICHEL, 1988. Evidence for recent temperature-induced water migration into permafrost from the tritium content of ground ice near Mayo, Yukon Territory, Canada. Canadian Journal of Earth Sciences, 25(6), June, 909-915. Reprint Series No.96, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

BURN, C.R. and F.A. MICHEL, 1989. Implications of the isotopic composition of precipitation in northwest Canada for paloeoenvironmental reconstruction from ground ice. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A59

BURN, C.R. and C.A.S. SMITH, 1988. Observations of the "thermal offset" in near-surface mean annual ground temperatures at several sites near Mayo, Yukon Territory, Canada. Arctic, 41(2), June, 99-104. Reprint Series No.95, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

BURN, C.R. and M.W. SMITH, 1988. Thermokarst lakes at Mayo, Yukon Territory, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 700-705. Reprint Series No.101, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

BURSEY, G.G., T.W.D. EDWARDS and S.K. FRAPE, 1989. Hydrogeological investigation of an arctic watershed: physical, isotopic, and geochemical data. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A14

BURSEY, G.G., T.W.D. EDWARDS and S.K. FRAPE, 1990. Active layer hydrology and geochemistry studies, District of Keewatin, Northwest Territories, Canada. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

BURT, T., 1988. Book reviews - Williams, P.J. 1987: Pipelines and permafrost: science in a cold climate, second edition. Ottawa: Carleton University Press. v + 129 pp. US$9.95 paper. Progress in Physical Geography, 12(4), December, 618-621

BUTLER, D.R. and G.P. MALANSON, 1989. Periglacial patterned ground, Waterton-Glacier International Peace Park, Canada and U.S.A. Zeitschrift für Geomorphologie, 33(1), 43-57

CAMES-PINTAUX, A.M., J.AGUIRRE-PUENTE et L.E. GOODRICH, 1990. Résolution du problème bidimensionnel de Stefan par une méthode implicite de directions alternées. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

CANADA, NATIONAL RESEARCH COUNCIL OF CANADA, 1988. Glossary of Permafrost and related ground-ice terms. Technical Memorandum No.142, Permafrost Subcommittee, Associate Committee on Geotechnical Research, National Research Council of Canada (NRCC 27952), Ottawa, Ontario, 156 pp.

CANADA, CONSEIL NATIONAL DE RECHERCHES CANADA, 1988. La terminologie du pergélisol et notions connexes. Note de service technique no.142, Sous-comité du pergélisol, Comité associé de recherches géotechniques, Conseil national de recherches du Canada (CNRC 27952 F), Ottawa, Ontario, 154 pp.

CARETTE, N., 1989. Comptes rendus: Sous-comité du pergélisol (1988): La terminologie du pergélisol et notions connexes, Note de service technique n°142, Conseil national de recherches Canada, Ottawa, 154 p., 24 fig., 15 x 23 cm, 15$. ISBN 0-660-12540-4. Géographie Physique et Quaternaire, 43(1), 115-116

CARLSON, L.E. and J.F. NIXON, 1988. Subsoil investigation of ice lensing at the Calgary, Canada, frost heave test facility. Canadian Geotechnical Journal, 25(2), May, 307-319

CHAPUIS, R.P., 1988. Two case histories of major frost heaving in refrigerated buildings: thermal analyses, repairs, and prevention. Canadian Geotechnical Journal, 25(3), August, 535-540

CLARK, M.J., 1988. Periglacial hydrology. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 415-462

COULTER, D.M., 1990. Applications of thermopiles or thermosyphons in permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

CRAMPTON, C.B., 1988. Terrain evaluation and pipeline construction in the Canadian North. Musk-ox, No.36, 19-28

CUMMINGS, C.E. and W.H. POLLARD, 1990. An investigation of palsas in the Schefferville area. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

DALLIMORE, S.R., 1989. Massive ground ice occurrence in the vicinity of Tuktoyaktuk, N.W.T. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A60

DALLIMORE, S.R., P.J. KURFURST and J.A.M. HUNTER, 1988. Geotechnical and geothermal conditions of near-shore sediments, southern Beauforst (sic) Sea, Northwest Territories, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 127-131

DALLIMORE, S.R., P.J. KURFURST and B.R. PELLETIER, 1989. Effects of recent sea level change and erosion on coastal zone geotechnics/Effets des variations recentes du niveau de la mer et de l'erosion sur le cadre géotechnique des zones côtières. In - Current Activities Forum, Program with abstracts/Forum des travaux en cours, programme et résumés, Geological Survey of Canada/ Commission géologique du Canada, 17-18 January/janvier 1989, Ottawa, Ontario, 10

DALLIMORE, S.R. and S.A. WOLFE, 1988. Massive ground ice associated with glaciofluvial sediments, Richards Islands, N.W.T., Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 132-137

DASCAL, O., 1989. Critiques de livres - La terminologie du pergélisol et notions connexes. Revue canadienne de géotechnique, 26(4), novembre, 769-770

De GANS, W., 1988. Pingo scars and their identification. In - Advances in Periglacial Hydrology, M.J. Clark (editor), Wiley-Interscience Publications, John Wiley & Sons, 299-322

de KROM, V. and W.H. POLLARD, 1988. The internal structure of a palsa in the Schefferville area, Québec. Abstracts and Programme, Annual Meeting, Canadian Association of Geographers, Halifax, Nova Scotia, ***

de KROM, V. and W.H. POLLARD, 1990. Retrogressive thaw slump and active layer slide activity, Herschel Island, Yukon Territory. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

DESROCHERS, D.T., 1988. An investigation of snow and ground thermal regimes in the Schefferville area, northern Quebec. Ph.D. thesis in process, Department of Geography, McGill University, Montréal, Quebec, ** pp.

DESROCHERS, D.R., 1990. The ground thermal regime of a subarctic tundra and woodland near Schefferville, Quebec. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

DESROCHERS, D.T. and H.B. GRANBERG, 1988. Schefferville snow-ground interface temperatures. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 67-72

De KROM, V. and W.H. POLLARD, 1988. The internal structure of a palsa in the Schefferville area. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 66

DeWOLF, Y., 1988. Stratified slope deposits. In - Advances in Periglacial Hydrology, M.J. Clark (editor), Wiley-Interscience Publications, John Wiley & Sons, 91-110

DICK, T.M., 1989. Profile: Environment Canada's National Hydrology Research Institute, Saskatoon, Saskatchewan. R&D Bulletin No.201, Supply and Services Canada, Ottawa, Ontario, December, 3-6

DIONNE, J.-C. et V. GERARDIN, 1988. Observations sur les buttes organiques de la côte-nord du golfe du Saint-Laurent, Québec. Géographie Physique et Quaternaire, 42(3), 289-301

DITATA, M., 1988. Caractéristiques physiques et chimiques de trois tourbières subarctiques dans la région de Schefferville, Québec. Dans - Les recherches des étudients dans le nord canadien, Actes de la Conférence nationale des étudiants en études nordiques, W. Peter Adams et Peter G. Johnson (éditeurs), 18-19 novembre 1986, Ottawa, Ontario, Association universitaire canadienne d'études nordiques, 68-72

DOMASCHUK, L., 1988. Book reviews - The permafrost environment. Canadian Geotechnical Journal, 25(2), May, 409-410

DOMASCHUK, L., L. FRANSSON and D.H. SHIELDS, 1988. Interaction between a laterally loaded pile and frozen soil. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1060-1065

DOMASCHUK, L. and D.H. SHIELDS, 1990. Creep of a laterally loaded pile in frozen sand. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

DOWDESWELL, J., 1990. Reviews - Permafrost. Polar Record, 26(156), January, 59-60

DREDGE, L.A., 1988. The buffering potential of carbonate soils in discontinuous permafrost terrain, against natural and man-induced acidification. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 564-567

DUFOUR, S. and I. HOLUBEC, 1988. Performance of two earthfill dams at Lupin, N.W.T. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1217-1222

DYKE, L., 1988. Permafrost aggradation along an emergent coast, Churchill, Manitoba. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 138-142

DYKE, L. and P. EGGINTON, 1988. Till behaviour and its relationship to active-layer hydrology, District of Keewatin, Northwest Territories. Canadian Geotechnical Journal, 25(1), February, 167-172

DYKE, L. and P. EGGINTON, 1990. Influence of ice fabric on the hydraulic conductivity of thawing soil. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

EDLUND, S.A., 1989. Vegetation indicates potentially unstable arctic terrain/La végétation dénote l'éventualité d'un terrain arctique instable. GEOS, Energy, Mines and Resources Canada/Énergie, Mines et Ressources Canada, 18(3), Summer/été 9-13

EDLUND, S.A., 1989. Vegetation patterns assist in identifying potentially thaw-sensitive terrain on central Ellesmere Island, Arctic Canada. Proceedings, AAAS 40th Arctic Science Conference, Global Change, 14-16 September 1989, Fairbanks, Alaska, Arctic Division, American Association for the Advancement of Science, abstract, 24

EDLUND, S.A., B.T. ALT, D.G. HARRY and B.H. LUCKMAN, 1989. Plant distribution indicators of potential terrain instability, Ellesmere Island, N.W.T./Indices d'instabilité possible du terrain établis à partir de la repartition de certaines plantes dans l'île d'Ellesmere, T.N.-O. In - Current Activities Forum, Program with Abstracts/Forum des travaux en cours, Programme et résumés, Geological Survey of Canada/Commission géologique du Canada, 17-18 January/janvier 1989, Ottawa, Ontario, 10

EDLUND, S.A., B.T. ALT and K.L. YOUNG, 1989. Interaction of climate, vegetation, and soil hydrology at Hot Weather Creek, Fosheim Peninsula, Ellesmere Island, Northwest Territories. In - Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.89-1D, Ottawa, Ontario, 125-133

EDLUND, S.A., B.T. ALT and K.L. YOUNG, 1989. Investigations of climate, vegetation, and soil hydrology in an intensive intermontane region of the Canadian High Arctic Islands. Operational geographer, 7(3), September, 62

EDLUND, S.A., M.-K. WOO and K.L. YOUNG, 1990. Climate, hydrology and vegetation patterns, Hot Weather Creek, Ellesmere Island, Arctic Canada. 8th International Northern Research Basins Symposium and Workshop, 26-30 March 1990, Abisko, Sweden, Water Resources Engineering, Luleå University of Technology, 14 pp. To be published in Nordic Hydrology

EDWARDS, R.N., P.A. WOLFGRAM and A.S. JUDGE, 1988. ICE-MOSES experiment: mapping permafrost zones electrically beneath the Beaufort Sea. Marine Geophysical Researches, 9(3), 265-290

EGGINTON, P.A. and L.D. DYKE, 1990. Apparent hydraulic conductivities associated with thawing, frost-susceptible soils. Permafrost and Periglacial Processes, 1(1), 69-77

ENGELMARK, H., 1988. Rates of infiltration into frozen and unfrozen fine sand. Canadian Journal of Earth Sciences, 25(2), 343-347

ETKIN, D.A., A. HEADLEY and K.J.L. STOKER, 1988. A long-term permafrost and climate monitoring program in northern Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 73-77

ETKIN, D.A., A. HEADLEY and K.J.L. STOKER, 1988. Permafrost-climate activities within the Canadian Climate Centre. Report No.88-7, Canadian Climate Centre, Atmospheric Environment Service, Downsview, Ontario, 92 pp.

EVANS, D.J.A. and R.J. ROGERSON, 1988. Radiocarbon-dated gelifluction lobe in the Nachvak Fiord area, northern Labrador, Canada. Earth Surface Processes and Landforms, 13(7), November, 657-662

EVANS, K.E., G.P. KERSHAW and B.J. GALLINGER, 1988. Physical and chemical characteristics of the active layer and near-surface permafrost in a disturbed homogeneous Picea mariana stand, Fort Norman, N.W.T., Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 568-573

EVERETT, K.R., 1989. Book reviews - Glossary of permafrost and related ground-ice terms. By Permafrost Subcommittee, Associate Committee on Geotechnical Research, National Research Council of Canada. (National Research Council of Canada Technical Memorandum No.142.) 156 pp. French and English editions. $Can 15.00. ISBN 0-660-12540-4. Arctic and Alpine Research, 21(2), May, 213

FAHEY, B.D. and T.H. LEFEBVRE, 1988. The freeze-thaw weathering regime at a section of the Niagara Escarpment on the Bruce Peninsula, southern Ontario, Canada. Earth Surface Processes and Landforms, 13(4), June, 293-304

FERRIANS, O.J., Jr, 1989. Book reviews - Glossary of permafrost and selected ground-ice terms. Canadian Geotechnical Journal, 26(4), November, 769

FILION, L. and S. PAYETTE, 1989. Subarctic lichen polygons and soil development along a colonization gradient on eolian sands. Arctic and Alpine Research, 21(2), May, 175-184

FORBES, B.C., 1990. Anthropogenic tundra disturbances in the Canadian Eastern Arctic: an airphoto chronology coupled with detailed surface investigations. Proceedings, 1st Circumpolar Symposium on Remote Sensing of Arctic Environments, 1-3 MAY 1990, Yellowknife, N.W.T., **-**

FORIERO, A. and B. LADANYI, 1989. A streamline solution for rigid laterally loaded piles in permafrost. Canadian Geotechnical Journal, 26(4), 568-574

FORIERO, A. and B. LADANYI, 1990. Finite element simulation of behaviour of laterally loaded piles in permafrost. Journal of Geotechnical Engineering, 116(2), American Society of Civil Engineers, February, 266-284

FORTIER, R., M. ALLARD, F.A. SAVARD, R. DESBIENS et J. PILON, 1990. Suivi spatio-temporel de l'évolution du front de dégel à l'intérieur d'un terrain pergélisolé à l'aide du capacitance mètre à fréquence variable. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

FRENCH, H.M., 1988. Active layer processes. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 151-177

FRENCH, H.M., 1988. Periglacial landform. In - The Canadian Encyclopaedia, Second Edition, Volume III, Min - Sta, J.H. Marsh (Editor), Hurtig Publishers, Edmonton, 1643

FRENCH, H.M., 1988. Pingo. In - The Canadian Encyclopaedia, Second Edition, Volume III, Min - Sta, J.H. Marsh (Editor), Hurtig Publishers, Edmonton, 1678-1679

FRENCH, H.M. and D.G. HARRY, 1988. Nature and origin of ground ice, Sandhills Moraine, southwest Banks Island, western Canadian Arctic. In - Periglacial Phenomena: Ancient and Modern, H.M. French and A.E. Koster (Editors), IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 19-30

FRENCH, H.M. and D.G. HARRY, 1990. Observations on buried glacier ice and massive segregated ice, western arctic coast, Canada. Permafrost and Periglacial Processes, 1(1), 31-43

FRENCH, H.M. and J. KARTE, 1988. A periglacial overview. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 463-473

FRENCH, H.M. and E.A. KOSTER (Editors), 1988. Periglacial phenomena: ancient and modern. IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 110 pp.

FRENCH, H.M. and E.A. KOSTER (Editors), 1988. Periglacial processes and landforms. Special INQUA Issue, Zeitschrift für Geomorphologie, Supplementband No.71, 165 pp.

FUJINO, K., S. SATO, K. KATO, K. MATSUDA and O. SHIMIZU, 1989. Origin of the massive ground ice body near Tuktoyaktuk, N.W.T. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A60

FUJINO, K., S. SATO, K. MATSUDA, G. SASA, O. SHIMIZU and K. KATO, 1988. Characteristics of the massive ground ice body in the western Canadian Arctic (11). Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 143-147

FUJINO, K., S. SATO, K. MATSUDA, G. SASA, O. SHIMIZU and K. KATO, 1988. Characteristics of the massive ground ice body in the western Canadian Arctic related to paleoclimatology. In - Characteristics of the Massive Ground Ice in the Western Canadian Arctic related to Paleoclimatology, 1986-1987. K. Fujino (Editor), Institute of Low Temperature Science, Hokkaido University, Kosoku Printing Centre, Sapporo, Japan, 10-23

GAHÉ, E., 1988. Géomorphologie cryogène et géophysique dans la région de Kangiqsualujjuaq. Ph.D. thesis, Département de géographie, Université Laval, Sainte-Foy (Québec), 210 pp.

GAHÉ, E., M. ALLARD, M.K. SEGUIN and R. FORTIER, 1988. Measurements of active layer and permafrost parameters with electrical resistivity, self potential and induced polarization. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 148-153

GATES, D.M., 1988. Book reviews - Pipelines and Permafrost: Science in a Cold Climate. By Peter J. Williams. (Ottawa): Carleton University Press, 1986. Originally published 1979 by Longman, London, viii + 129 pp. $9.95 Can. ISBN 0-88629-056-2. Arctic and Alpine Research, 20(1), February, 127

GAVRILOWA, M.K., 1988. Permafrost-climatic characteristics of different classes. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 78-83

GLOBE AND MAIL, 1988. 1988. Mudslides in Arctic possible with warming. Globe and Mail, Toronto, Ontario, Saturday, 7 May, D4

GOODRICH, L.E. and J.C. PLUNKETT, 1990. Performance of heat-pump chilled foundations. Proceedings, 5th Canadian Permafrost Conference, 6-8 june 1990, Québec, Quebec, **-**

GOWAN, R.J. and S.R. DALLIMORE, 1990. Ground ice associated with granular deposits in the Tuktoyaktuk Coastlands areas, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

GRANBERG, H.B., 1988. On the spatial dynamics of snowcover-permafrost relationships at Schefferville. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 159-164

GRANBERG, H.B., 1988. Modelling Schefferville permafrost - Phase III: development of digital terrain models for permafrost research sites. Final report, DSS Contract No.24ST.23233-6-1291, Département de géographie et télédétection, Université de Sherbroke, Sherbrooke, Québec, 127 pp.

GRANBERG, H.B., 1989. Permafrost mapping at Schefferville, Quebec. Physical geography, 10(3), September, 249-269

GRANGER, R.J. and D.M. GRAY, 1990. The impact of frozen soil on Prairie hydrology. Proceedings, International Symposium, Frozen Soil Impacts on Agricultural, Range, and Forest Lands, K.R. Cooley (Editor), 21-22 March 1990, Spokane, Washington, CRREL Special Report No.90-1, Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, Hanover, New Hampshire, 247-256

GRAY, J.T., J. PILON and J. POITEVIN, 1988. A method to estimate active-layer thickness on the basis of correlations between terrain and climatic parameters as measured in northern Quebec. Canadian Geotechnical Journal, 25(3), 607-616

GUSTAFSON, C.A. and S.A. HARRIS, 1990. Debris flow characteristics in an area of continuous permafrost, St. Elias Range, Yukon Territory. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HALLIWELL, D.H., 1989. A numerical model of the surface energy balance and ground thermal regime in organic permafrost. Ph.D. thesis, Department of Geography, McMaster University, Hamilton, Ontario, ** pp.

HALLIWELL, D.H. and W.R. ROUSE, 1988. Evaporative controls on ground temperatures in permafrost. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 90

HALLIWELL, D.H., W.R. ROUSE and E.J. WEICK, 1990. Surface energy balance and ground heat flux in organic permafrost terrain under variable moisture conditions. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HAMILTON, J.P. and D.C. FORD, 1990. The hydrology of springs in brecciated carbonate strata, Mackenzie Mountains, Norman Region, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HANNA, A.J., R.J. FORSYTH and D. GARVIN, 1990. Thaw settlement around a building on warm ice-rich permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HANNA, A.J. and E.C. McROBERTS, 1988. Permafrost slope design for a buried oil pipeline. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1247-1252

HARPER, J.R., 1990. Morphology of the Canadian Beaufort Sea coast. In - The Beaufort Sea Coastal Zone, P.R. Hill (Editor), Special Section, Marine Geology, 91(1-2), January, 75-91

HARRIS, S.A., 1988. The alpine periglacial zone. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 369-413

HARRIS, S.A., 1988. Permafrost. In - The Canadian Encyclopaedia, Second Edition, Volume III, Min - Sta, J.H. Marsh (Editor), Hurtig Publishers, Edmonton, 1644-1645

HARRIS, S.A., 1988. Observations on the redistribution of moisture in the active layer and permafrost. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 364-369

HARRIS, S.A., 1988. Reviews - Pipelines and permafrost: science in a cold climate. Arctic, 41(3), September, 245

HARRIS, S.A., 1989. Continentality index: its uses and limitations applied to permafrost in the Canadian Cordillera. Physical Geography, 10(3), September, 270-284

HARRIS, S.A., 1989. Landforms and ground ice as evidence of the source of H_2O in permafrost. Progress in Physical Geography, 13(3), September, 367-390

HARRIS, S.A., 1990. The effect of moisture changes on long-term air and ground temperature records from the Canadian Cordillera. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HARRIS, S.A. and C.A. GUSTAFSON, 1988. Retrogressive slumps, debris flows and river valley development in icy, unconsolidated sediments on hills and mountains. Zeitschrift für Geomorphologie, 32(4), 441-455

HARRIS, S.A. and H.R. KROUSE, 1989. Origin of ground ice as interpreted from stable isotope data. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A59

HARRY, D.G., 1988. Ground ice and permafrost. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 113-149

HARRY, D.G., 1990. Distribution and origin of massive ice and icy beds, Fosheim Peninsula, Ellesmere Island. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HARRY, D.G. and S.R. DALLIMORE, 1989. Permafrost, ground ice and global change in the Beaufort Sea coastlands/Pergélisol, glace de sol et changements globaux dans les terres en bordure de la mer de Beaufort. GEOS, Energy, Mines and Resources Canada/Énergie, Mines et Ressources Canada, 18(3), Summer/été, 48-53

HARRY, D.G., S.R. DALLIMORE and P.J. KURFURST, 1989. Global change implications of ground ice distribution in the Tuktoyaktuk coastlands, N.W.T./Incidence du changement global sur la repartition de la glace dans le sol dans les terres côtières de Tuktoyaktuk, T.N.-O. In - Current Activities Forum, Program with abstracts/Forum des travaux en cours, programme et résumés, Geological Survey of Canada/Commission géologique du Canada, 17-18 January/janvier 1989, Ottawa, Ontario, 12

HARRY, D.G. and H.M. FRENCH, 1988. Cryostratigraphic studies of permafrost, northwestern Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 784-789

HARRY, D.G., H.M. FRENCH and W.H. POLLARD, 1988. Massive ground ice and ice-cored terrain near Sabine Point, Yukon Coastal Plain. Canadian Journal of Earth Sciences, 25(11), November, 1846-1856

HARRY, D.G. and J.S. GOZDZIK, 1988. Ice wedges: growth, thaw transformation, and paleoenvironmental significance. In - Periglacial Phenomena: Ancient and Modern, H.M. French and A.E. Koster (Editors), IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 39-55. GSC Contribution No.49387

HARRY, D.G. and K.L. MacINNES, 1988. The effect of forest fires on permafrost terrain stability, Little Chicago-Travaillant Lake area, Mackenzie Valley, N.W.T. In - Current Research Part D, Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.88-1D, Ottawa, Ontario, 91-94. Also - Current Research Part A, Abstracts, Geological Survey of Canada Paper No.88-1A, 56

HAYHOE, H.N. and D. BALCHIN, 1988. Time-domain reflectometry and electrical conductance measurements during seasonal soil frost. Cold Regions Science and Technology, 15(2), May, 195-200. Also - Land Resource Research centre Contribution No.87-79, Agriculture Canada, Ottawa, Ontario

HAYLEY, D.W., 1988. Maintenance of a railway grade over permafrost in Canada. Permafrost, Fifth International Conference, K. Senneset (Editor), 2-5 August 1988, Trondheim, Tapir Publishers, Vol.3, 43-48

HAYLEY, D.W., 1989. Maintenance of a railway grade over permafrost in Canada. The Northern Engineer, 21(3), 4-10

HEGINBOTTOM, A., 1989. A review of permafrost data in Canada. In - Ice Core Update, 1980-1989: Permafrost Data Workshop, A.M. Brennan and R.G. Barry (Editors), Report No.GD-23, Glaciological Data, World Data Center A for Glaciology [Snow and Ice], Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado, December, 113-115

HEGINBOTTOM, J.A. (Compiler), 1989. Chapter 9. A survey of geomorphic processes in Canada. In - Quaternary Geology of Canada and Greenland, R.J. Fulton (Editor), Geology of Canada No.1, Geological Survey of Canada, Ottawa, Ontario, and Vol.K-1, Geology of North America, Decade of North American Geology, Geological Society of America, 573-644

HÉQUETTE, A., 1988. Coastal erosion and shoreface evolution in the southern Canadian Beaufort Sea. Programme and Abstracts, 1988 Annual Meeting, Canadian Association of Geographers, 31 May - 7 June 1988, Halifax, Nova Scotia, 95

HÉQUETTE, A. and P.W. BARNES, 1990. Coastal retreat and shoreface profile variations in the Canadian Beaufort Sea. In - The Beaufort Sea Coastal Zone, P.R. Hill (Editor), Special Section, Marine Geology, 91(1-2), January, 113-132

HÉTU, B., 1988. Le pergélisol: la cryosphère terrestre. Science-Activités, 11(*), 16-18

HILL, P.R., 1989. The Mackenzie Delta - Beaufort Shelf depositional system. Atlantic Geoscience Society, 1989 Colloquium, 3-4 February 1989, Amherst, Nova Scotia, Atlantic Geology, 25(2), August, abstract, 161

HIVON, E. and D.C. SEGO, 1990. Determination of the unfrozen water content in saline permafrost using time-domain reflectometry (TDR). Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HOLUBEC, I., 1990. Thread bar pile for permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HORIGUCHI, K., 1988. Electric conductivity of an ice core obtained from massive ground ice. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 377-380

HUGHES, O.L., 1989. Terrain and permafrost: their influence on northern construction. In - Northern Hydrocarbon development in the Nineties: a Global Perspective, F.T. Frankling (Editor), Geotechnical science Laboratories, Carleton University, Ottawa, Ontario, 109-118

HUNEAULT, P. and B. LADANYI, 1988. Cone penetrometer and pressuremeter tests in permafrost. CINEP Report No.01-1988, Northern Engineering Centre, École Polytechnique, Université de Montréal, Montréal, Québec, ** pp.

HUNEAULT, P., B. LADANYI and L. ZHU, 1988. Effects of frozen soil creep on stresses at the moving thaw front around a wellbore. Proceedings, 5th International Symposium on Ground Freezing, 26-28 July 1988, Nottingham, U.K., Vol.1, A.A. Balkema, Rotterdam, 279-284

HUNTER, J.A., 1988. Permafrost aggradation and degradation on arctic coasts of North America. Permafrost, Fifth International Conference, K. Senneset (Editor), 2-5 August 1988, Trondheim, Tapir Publishers, Vol.3, 27-34

HUNTER, J.A., H.A. MacAULAY, S.E. PULLAN, R.M. GAGNÉ, R.A. BURNS and R.L. GOOD, 1988. Thermal evidence for an active layer on the seabottom of the Canadian Beaufort Sea shelf. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 949-954

HUNTER, J.A., S.E. PULLAN, R.M. GAGNÉ, R.A. BURNS and R.L. GOOD, 1988. Geophysical methods for the delineation of subseabottom permafrost/Méthodes géophysiques servant à délimiter l'étendue du pergélisol sous le fond marin. Current Activities Forum 1988, Program with Abstracts/Forum des travaux en cours 1988, Programme et résumés, 19-20 January 1988/19 et 20 janvier 1988, Geological Survey of Canada/Commission géologique du Canada, Ottawa, Ontario, unpaginated

HUNTER, J.A., S.E. PULLAN, M. NIXON, L.E. STEPHENS, S. RATTE, R.L. GOOD and R.A. BURNS, 1990. Geophysical surveys of a shallow subseabottom permafrost zone in the near-shore area of the southern Beaufort Sea. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

HYATT, J.A., 1989. Examination of ice-wedges at Pangnirtung Reservoir, Baffin Island, N.W.T. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A76

HYATT, J.A., 1989. Permafrost conditions at the site of the new Pangnirtung reservoir, Pangnirtung, N.W.T., Canada. Department of Geography, Queen's University, Kingston, Ontario, ** pp.

HYATT, J.A. 1990. The origin, growth, and decay of ice wedges exposed during construction of a reservoir in Pangnirtung, Baffin Island, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

JETCHICK, E., 1988. Les polygones à coin de sol dans les tills, région du lac Minto, Québec nordique. Thèse de maîtrise, Département de géographie, Université Laval, Québec (Québec), 165 pp.

JETCHICK, E. and M. ALLARD, 1990. Soil wedge polygons in northern Quebec; description and paleoclimatic significance. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

JONES, F.W., J.A. MAJOROWICZ and A.F. EMBRY, 1989. A heat flow profile across the Sverdup Basin, Canadian Arctic Islands. Geophysics, 54(2), February, 171-180

JOSHI, R.C. and H. WIJEWEERA, 1990. Post peak axial compression strength and deformation behavior of fine-grained frozen soils. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

JUDGE, A., 1989. Environmental data directory - deep ground temperatures, mean annual ground surface temperatures and permafrost thickness determinations northern and arctic Canada. In - Ice Core Update, 1980-1989: Permafrost Data Workshop, A.M. Brennan and R.G. Barry (Editors), Report No.GD-23, Glaciological Data, World Data Center A for Glaciology [Snow and Ice], Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado, December, 124-126

JUDGE, A.S., 1990. Evidence for the widespread presence of gas hydrates in the Canadian Arctic offshore. Fall Meeting Late Abstracts, 4-8 December 1989, San Francisco, California, EOS, Transactions, American Geophysical union, 71(6), 6 February, 257

JUDGE, A.S., D.G. HARRY and J.A. HUNTER, 1989. Global change and permafrost stability/Le changement global et la stabilité du pergélisol. In - Current Activities Forum, Program with abstracts/Forum des travaux en cours, programme et résumés, Geological Survey of Canada/Commission géologique du Canada, 17-18 January/janvier 1989, Ottawa, Ontario, 1

JUDGE, A.S. and B.J. MOORMAN, 1990. Georadar mapping of massive ground ice at Peninsula Point, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

JUDGE, A.S., A.E. TAYLOR and D. ALLEN, 1989. Ground temperature and climate change: examples from northwest Canada/Température du sol et changement climatique: exemples tirés du nord-ouest canadien. In - Current Activities Forum, Program with abstracts/Forum des travaux en cours, programme et résumés, Geological Survey of Canada/Commission géologique du Canada, 17-18 January/janvier 1989, Ottawa, Ontario, 14

JUDGE, A.S. and C.M. TUCKER, 1990. Remote sensing of permafrost by ground penetrating radar at two arctic Canadian airports. Proceedings, 1st Circumpolar Symposium on Remote Sensing of Arctic Environments, 1-3 May 1990, Yellowknife, N.W.T., **-**

KAY, B.D. and E. PERFECT, 1988. State of the art: heat and mass transfer in freezing soils. Proceedings, 5th International Symposium on Ground Freezing, 23-28 July 1988, Nottingham, U.K., Ground Freezing 88, Vol.1, R.H. Jones and J.T. Holden (Editors), A.A. Balkema, 3-21

KERSHAW, G.P. (Editor), 1988. Northern environmental disturbances. Occasional Publication No.24, Boreal Institute for Northern Studies, University of Alberta, Edmonton, Alberta, 70 pp.

KING, L., 1990. The geomorphology of high arctic push moraines in the Queen Elizabeth Islands, N.W.T., Canada. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

KINGSBURY, C.M. and T.R. MOORE, 1988. The freezing and thawing of a subarctic fen, Schefferville, Québec. In - Student Research in Canada's North, Proceedings of the National Student Conference on Northern Studies, W. Peter Adams and Peter G. Johnson (Editors), 18-19 November 1986, Ottawa, Ontario, Association of Canadian Universities for Northern Studies, 98-103

KINGSBURY, C.M. and T.R. MOORE, 1989. Over-winter chemistry of subarctic fens, eastern Canada. Nordic Hydrology, 20(2), 97-108

KJARTANSON, B.H., D.H. SHIELDS, L. DOMASCHUK and C.-S. MAN, 1989. The creep of ice measured with the pressuremeter: reply. Canadian Geotechnical Journal, 26(2), May, 329-330

KONRAD, J.-M., 1988. Influence of freezing mode on frost heave characteristics. Cold Regions Science and Technology, 15(2), May, 161-175

KONRAD, J.-M., 1988. Temperature of ice lens formation in freezing soils. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 384-389

KONRAD, J.-M., 1989. Effect of freeze-thaw cycles on the freezing characteristics of a clayey silt at various overconsolidation ratios. Canadian Geotechnical Journal, 26(2), May, 217-226 (340-360)

KONRAD, J.-M., 1989. Ice formation in saline soils. GSC Open File Report No.2117, Geological Survey of Canada, Ottawa, Ontario, 2 volumes, 362 pp.

KONRAD, J.-M., 1989. Influence of cooling rate on the temperature of ice lens formation in clayey silts. Cold Regions Science and Technology, 16(1), 25-36

KONRAD, J.-M., 1989. Influence of overconsolidation on the freezing characteristics of a clayey silt. Canadian Geotechnical Journal, 26(1), February, 9-21

KONRAD, J.-M., 1989. Physical processes during freeze-thaw cycles in clayey silts. Cold Regions Science and Technology, 16(3), July, 291-303

KONRAD, J.-M., 1989. Pore water pressure at an ice lens: its measurement and interpretation. Cold Regions Science and Technology, 16(1), January, 63-74

KONRAD, J.-M., 1989. Massive ground ice: a frost heave mechanism? Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A58

KONRAD, J.-M., 1990. Massive ground ice: a frost heave mechanism? Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

KONRAD, J.-M., 1990. Unfrozen water as a function of void ratio in a clayey silt. Cold Regions Science and Technology, 18(1), April, 49-55

KOSTER, E.A. and H.M. FRENCH (Editors), 1988. Periglacial processes and landforms. Zeitschrift für Geomorphologie, Supplementband No.71, 1-156

KURFURST, P.J. and S.R. DALLIMORE, 1989. Geological and geotechnical conditions of the Beaufort Sea coastal zone, Arctic Canada. Proceedings of the Symposium on Coastal Lowlands: Geology and Geotechnology, W.J.M. van der Linden, A.P.L. Sierd, J.P.K. Kaasschieter, W.J.E. van de Graaff, J. Vandenberghe and J.A.M. van der Gun (Editors), 23-27 May 1987, The Hague, Netherlands, Kluwer Academic Publishers, Dordrecht, Netherlands, 121-129

KURFURST, P.J. and S.E. PULLAN, 1988. Acoustic properties of frozen near-shore sediments, southern Beaufort Sea, Arctic Canada. Proceedings, 5th International Symposium on Ground Freezing, 23-28 July 1988, Nottingham, U.K., Ground Freezing 88, Vol.1, R.H. Jones and J.T. Holden (Editors), A.A. Balkema, 197-203

KUTASOV, I.M., 1988. Prediction of permafrost thickness by the "two point" method. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 965-970

LACHENBRUCH, A.H., 1989. Permafrost temperatures and the changing climate. 1989 American Association for the Advancement of Science 155th National Annual Meeting, 14-19 January 1989, San Francisco, California, AAAS Publication No.88-30, abstract, 28

LADANYI, B., 1988. Discussion on "Piles in permafrost". ASCE Journal of Cold Regions Engineering, 2(3), 140-141

LADANYI, B., 1988. Short- and long-term behaviour of axially loaded bored piles in permafrost. Proceedings, Symposium on Deep Foundations on Bored and Auger Piles, Ghent, Belgium, 121-131

LADANYI, B. and J.F. MOREL, 1988. Effect of internal confinement on compression strength of frozen sand. Proceedings, 41st Canadian Geotechnical Conference, Waterloo, Ontario, 76-82

LADANYI, B. and M. SHEN, 1989. Mechanics of freezing and thawing in soils. Proceedings, Frost in Geotechnical Engineering, International Symposium, H. Rathmayer (Editor), 13-15 March 1988, Saariselkä, Finland, VTT Symposium No.94, Technical Research Centre of Finland, Espoo, Vol.1, 73-103

LADANYI, B. and P. HUNEAULT, 1989. The creep of ice measured with a pressuremeter: discussion. Canadian Geotechnical Journal, 26(2), 328-329

LaFLECHE, P.T., A.S. JUDGE, B.J. MOORMAN, B. CASSIDY and R. BEDARD, 1988. Ground probing radar investigations of gravel roadbed failures, Rae access road, N.W.T. In - Current Research Part D, Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.88-1D, Ottawa, Ontario, 129-135. Also - Current Research Part A, Abstracts, Geological Survey of Canada Paper No.88-1A, 59

LaFLECHE, P.T., A.S. JUDGE and J.A. PILON, 1988. The use of ground probing radar in the design and monitoring of water retaining embankments in permafrost. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 971-976

LAGAREC, D. et V. DEWEZ, 1990. Dynamique récente du pergélisol discontinu et changements globaux dans le nord du Québec. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

LANDINE, P.G., R.J. GRANGER and D.M. GRAY, 1988. Evaluation of snowmelt models for application in permafrost environment. NHRI Contract Report, Contract No.KW504-7-1554, Division of Hydrology, College of Engineering, University of Saskatchewan for National Hydrology Research Institute, Saskatoon, Saskatchewan, 31 March, 54 pp.

LAPRISE, D. et S. PAYETTE, 1988. évolution récente d'une tourbière à palses (Québec subarctique): analyse cartographique de dendrochronologique. Journal candien de botanique, 66(*), 2217-2227

LAURIOL, B., L. CARRIER and P. THIBAUDEAU, 1988. Topoclimatic zones and ice dynamics in the caves of the northern Yukon, Canada. Arctic, 41(3), September, 215-220

LAURIOL, B. et L. GODBOUT, 1988. Les terrasses de cryoplanation dans le nord du Yukon: distribution, genèse et âge. Géographie Physique et Quaternaire, 42(3), 303-314

LAWLER, D.M., 1988. Environmental limits of needle ice: a global survey. Arctic and Alpine Research, 20(2), May, 137-159

LEROUEIL, S., G. DIONNE et M. ALLARD, 1990. Compressibilité et consolidation au dégel d'un pergélisol silteux à Kangiqsualujjuaq. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

LÉVESQUE, R., M. ALLARD and M.K. SEGUIN, 1988. Le pergélisol dans les formations Quaternaires de la région des rivières Nastapoca et Sheldrake, Québec nordique. Collection Nordicana n°51, Centre d'études nordiques, Université Laval, Québec, 23 pp. + 18 cartes

LÉVESQUE, R., M. ALLARD and M.K. SEGUIN, 1988. Regional factors of permafrost distribution and thickness, Hudson Bay coast, Québec, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 199-204

LÉVESQUE, R., M. ALLARD, M.K. SEGUIN et J. PILON, 1990. Le régime thermique du mollisol et du pergélisol dans quelques localites du Nunavik. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

LEWKOWICZ, A., 1989. Development of active-layer detachments, Fosheim Peninsula, Ellesmere Island, N.W.T. In - Global Environmental Change and the Arctic, Abstracts of the 18th Annual Arctic Workshop, 13-15 April 1989, Department of Geography, University of Lethbridge, Lethbridge, Alberta, unpaginated, 1 pp.

LEWKOWICZ, A.G., 1990. Frequency and magnitude of active-layer detachments, Fosheim Peninsula, Ellesmere lsland, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

LOCK, G.S.H., K. CHONG, A. DYCKERHOFF, J. HUYER and B. JONES, 1989. On the design of wind-augmented thermosyphons. Cold Regions Science and Technology, 16(1), January, 11-23

LUCKMAN, B.H., D.G. HARRY, S.A. EDLUND and B.[T.] ALT, 1989. Global change, ground ice and geomorphic processes: some observations from the Fosheim Peninsula, Ellesmere Island, N.W.T. Canada. In - Global Environmental Change and the Arctic, Abstracts of the 18th Annual Arctic Workshop, 13-15 April 1989, Department of Geography, University of Lethbridge, Lethbridge, Alberta, unpaginated, 1 pp.

MACFARLANE, I.M., G.P. DAW, J. BELTON and S.J. HARVEY, 1989. Application of ground freezing at Rogers Pass, Canada. Proceedings, 5th International Symposium on Ground Freezing, Ground Freezing 88, R.H. Jones and J.T. Holden (Editors), 26-28 July 1988, Nottingham, U.K., A.A. Balkema, Rotterdam, Vol.2, 563-564

MACKAY, J.R., 1989. Canadian landform examples - 14. Ice-wedge cracks, western Arctic Coast. The Canadian Geographer/Le Géographe canadien, 33(4), 365-368

MACKAY, J.R., 1989. Massive ground ice near Tuktoyaktuk, N.W.T. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A59-A60

MACKAY, J.R., 1989. Massive ice; some field criteria for the identification of ice types. In - Frontier Geoscience Program, Arctic Canada/Programme géoscientifique des régions pionnières, région arctique du Canada, Geological Survey of Canada Paper No.89-1G, Ottawa, Ontario, 5-11

MACKAY, J.R., 1990. Some observations on the growth and deformation of epigenetic, syngenetic and anti-syngenetic ice wedges. Permafrost and Periglacial Processes, 1(1), 15-29

MACKAY, J.R. and O. SLAYMAKER, 1989. The Horton River breakthrough and resulting geomorphic changes in a permafrost environment, western arctic coast, Canada. Geografiska Annaler, 71A(3-4), 171-184

MARSH, P., 1990. Permafrost and lakes in the Mackenzie Delta. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

MAJOROWICZ, J.A., F.W. JONES and A.S. JUDGE, 1990. Deep subpermafrost thermal regime in the Mackenzie Delta basin, northern Canada: analysis from petroleum bottom-hole temperature data. Geophysics, 55(3), March, 363-371

MICHAUD, Y., J.-C. DIONNE and L.D. DYKE, 1989. Frost bursting: a violent expression of frost action in rock. Canadian Journal of Earth Sciences, 26(10), October, 2075-2080

MICHAUD, Y. and L.D. DYKE, 1990. Mechanism of bedrock frost heave in permafrost regions. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

MICHEL, F.A., 1990. Isotopic compo[illegible]ion of ice-wedge ice in northwestern Canada. Proceedings, 5th Canadian [illegible]rmafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

MICHEL, F.A. and R.O. van EVERDINGEN, 1988. Karst development in permafrost regions of northern Canada. In - Karst Hydrogeology and Karst Environment Protection, D. Yuan (Editor), IASH Publication No.176, International Association of Scientific Hydrology, Proceedings, 21st Congress, International Association of Hydrogeologists, 10-15 October 1988, Guilin, China, Vol.1, 249-254

MICHEL, F.A. and H.C. WILSON, 1988. Groundwater flow in permafrost regions of Canada. Proceedings, International Groundwater Symposium on Hydrogeology of Cold and Temperate Climates and Hydrogeology of Mineralized Zones, C.L. Lin (Editor), 1-5 May 1988, Halifax, Nova Scotia, Atlantic Region, Canadian National Chapter, International Association of Hydrogeologists, 149-155

MILLER, R.D., E. PERFECT and P.H. GROENEVELT, 1989. Formation of massive ground ice by thermally-induced regelation. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A59

MOISAN, Y., 1988. Étude de trois sites de polygones à coin de glace dans la région de Salluit, Québec arctique. Mémoire de bacc., Département de géographie, Université Laval, Québec (Québec), 71 pp.

MOISAN, Y., 1990. Études de trois sites de polygones à coins de glace dans la région de Salluit (Québec arctique). Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

MOOERS, H.D. and P.H. GLASER, 1989. Active patterned ground at sea level, Fourchu, Nova Scotia, Canada. Arctic and Alpine Research, 21(4), November, 425-432

MOORMAN, B.J. and A.S. JUDGE, 1989. Delineating massive ice with ground penetrating radar. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A76

MOORMAN, B.J., A.S. JUDGE and S.A. HARRIS, 1990. Ground penetrating and EM31 investigations of palsas. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

NELSON, F.E., 1989. Permafrost zonation in eastern Canada: a review of published maps. Physical geography, 10(3), 233-248

NISBET, E.G., 1989. Some northern sources of atmospheric methane: production, history, and future implications. Canadian Journal of Earth Sciences, 26(8), August, 1603-1611

NIXON, J.F., 1988. Pile load tests in saline permafrost at Clyde River, Northwest Territories. Canadian Geotechnical Journal, 25(1), February, 24-32

NIXON, J.F., K.A. SORTLAND and D.A. JAMES, 1990. Geotechnical aspects of northern gas pipeline design. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

NIXON, J.F., 1990. Seasonal and climatic warming effects on pile creep in permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

NOTENBOOM, W.G., M. CAMPBELL, S. CHEEMA, L.B. SMITH and R. DOUGLAS, 1988. Construction of the Pangnirtung water reservoir. Paper presented at Annual Conference of the Canadian Society for Civil Engineering, Calgary, Alberta, ** pp.

PADILLA, F. et P. GÉLINAS, 1988. Un modèle pour l'infiltration dans les sols gelés tenant compte de la qualité de l'eau. Revue canadienne de génie civil, 15(2), 263-271

PADILLA, F. and J.P. VILLENEUVE, 1990. Modeling the movement of water, heat and solutes in frost-susceptible soils. Proceedings, 5th Canadian Permafrost Conference, 6-8 june 1990, Québec, Quebec, **-**

PALMER, A., 1988. Reviews - Engineering for permafrost. Polar Record, 24(148), January, 71-72

PARAMESWARAN, V.R., 1988. Effective life in creep of frozen soils. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1156-1159

PARAMESWARAN, V.R., M. PARADIS and Y.P. HANDA, 1989. Strength of frozen sand containing tetrahydrofuran hydrate. Canadian Geotechnical Journal, 26(3), August, 479-483

PATTERSON, D.E., 1989. Analysis of 1988 in situ TDR (time-domain reflectometry) data, Norman Wells pipeline. Open File Report No.2109, Geological Survey of Canada, Ottawa, Ontario, 100 pp.

PATTERSON, D.E., D.E. LAWRENCE and P.J. WILLIAMS, 1988. The third freeze cycle of the Canada-France ground freezing experiment. Internal Report Series No.IR-54, final report to Permafrost Research Section, Terrain Sciences Division, Geological Survey of Canada from Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario, January, 78 pp.

PATTERSON, D.E., D.E. LAWRENCE and P.J. WILLIAMS, 1988. Spatial variability of heave around a pipeline and the effects of repeated freezing and thawing. Internal Report Series No.IR-55, report to Permafrost Research Section, Terrain Sciences Division, Geological Survey of Canada from Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario, 35 pp.

PATTERSON, D.E. and D.W. RISEBOROUGH, 1988. A detailed study of the physical and thermal properties of Norman Wells-Zama pipeline core specimens. Internal Report Series No.IR-56, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario, 130 pp.

PATTERSON, D.E. and M.W. SMITH, 1988. Computer analysis of Norman Wells pipeline thermal data. Internal Report Series No.IR-57, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario, 130 pp.

PERFECT, E., P.H. GROENEVELT and R.D. MILLER, 1990. A model for massive ground ice formation by thermally-induced regelation. Proceedings, 5th Canadian Permafrost Conference, 6-8 june 1990, Québec, Quebec, **-**

PERFECT, E., R.D. MILLER and B. BURTON, 1988. Frost upheaval of overwintering plants: a quantitative field study of the displacement process. Arctic and Alpine Research, 20(1), February, 70-75

PERFECT, E., R.D. MILLER and B. BURTON, 1988. Influence of root morphology and vigor on winter heaving of established alfalfa. Agronomy Journal, in press.

PERFECT, E., R.D. MILLER and B. BURTON, 1988. Spatial variation in seasonal frost heave cycles. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 436-441

PERMAFROST AND PERIGLACIAL PROCESSES, 1990. Book review - La terminologie du pergélisol et notions connexes, S.A. Harris, H.M. French, J.A. Heginbottom, G.H. Johnston, B. Ladanyi, D.C. Sego and R.O. van Everdingen. Ouvrage réalisé sous l'égide du Sous-Comité du pergélisol, du Comité associé de recherches géotechniques et du Conseil national de recherches du Canada. Note de service technique n°142 du Conseil National de Recherches du Canada. (traduction française: M. Verge et La Brie, L.), 154 pp. Permafrost and Periglacial Processes, 1(1), 79-81

PILON, J., M. BURGESS, A. JUDGE, V. ALLEN, K. MACINNES, D. HARRY, C. TARNOCAI and H. BAKER, 1989. Norman Wells to Zama oil pipeline permafrost and terrain research and monitoring procram: site establishment report. Geological Survey of Canada Open File Report No.2044, Ottawa, Ontario, 309 pp.

PILON, J.A., M.K. SEGUIN and M. ALLARD, 1989. Permafrost investigation with ground probing radar. Proceedings, Workshop on Ground Probing Radar, GSC Special Paper No.**, Geological Survey of Canada, Ottawa, Ontario, in press

PIPER, D., J.T. HOLDEN and R.H. JONES, 1989. A mathematical model of frost heave in granular materials. Proceedings, 5th International Symposium on Ground Freezing, Ground Freezing 88, R.H. Jones and J.T. Holden (Editors), 26-28 July 1988, Nottingham, U.K., A.A. Balkema, Rotterdam, Vol.2, 569-570

PISSART, A., 1988. Pingos: an overview of the present state of knowledge. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 279-297

POLEY, D.F., 1988. Acquisition and processing of high resolution reflection seismic data from permafrost affected areas of the Beaufort Sea Continental Shelf. Ph.D. thesis, University of Calgary, Calgary, Alberta, 286 pp.

POLLARD, W.H., 1988. Seasonal frost mounds. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 201-229

POLLARD, W.H., 1989. The petrographic characteristics of massive ground ice in the Herschel Island area, Yukon Territory. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A90

POLLARD, W.H., 1990. Ground ice investigations in the Herschel Island area, Yukon Coastal Plain. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

POLLARD, W.H. and S.R. DALLIMORE, 1988. Petrographic characteristics of massive ground ice, Yukon Coastal Plain. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 224-229

POLLARD, W.H. and V. De KROM, 1988. Ground ice characteristics of Herschel Island, Yukon Territory. Program with Abstracts, GAC/MAC/CSPG 1988 13th Joint Annual Meeting, 23-25 May 1988, St. John's, Newfoundland, Geological Association of Canada, Mineralogical Association of Canada, Canadian Society of Petroleum Geologists, A100

POPOV, A.I. and G.E. ROSENBAUM, 1988. Content of North American cryolithological map. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 230-232

POWER, M.A., 1988. Landsliding in Cement Creek, Kluane Ranges, southwestern Yukon. Yukon Geology, 1988, 51-60

PRÉVOST, C. et B. LAURIOL, 1990. Dynamique des ostioles d'après l'altération continentale de Hiatella Arctica. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

PRIESNITZ, K., 1988. Cryoplanation. In - Advances in Periglacial Hydrology, M.J. Clark (editor), Wiley-Interscience Publications, John Wiley & Sons, 49-67

PROWSE, T.D. and C.S.L. OMMANNEY (Editors), 1990. Northern hydrology: Canadian perspectives. NHRI Science Report No.1, National Hydrology Research Institute, Environment Canada, Saskatoon, Saskatchewan, 324 pp.

PROWSE, T.D., 1990. Northern hydrology: an overview. In - Northern Hydrology: Canadian Perspectives, T.D. Prowse and C.S.L. Ommanney (Editors), NHRI Science Report No.1, National Hydrology Research Institute, Environment Canada, Saskatoon, Saskatchewan, 1-36

RAMPTON, V.N., 1988. Origin of massive ground ice on Tuktoyaktuk Peninsula, Northwest Territories, Canada: a review of stratigraphic and geomorphic evidence. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 850-855

RATHMAYER, H., 1989. Frost in geotechnical engineering. Volume 2. International Symposium held at Saariselkae, Finland on March 13-15, 1989. VTT Symposium No.95, Valtion Teknillinen Tutkimuskeskus, Espoo (Finland), ISBN-951-38-3317-8, 513 pp.

RIDLEY, I. and K. DOMINIC, 1988. Gas hydrates keep energy on ice. Nev Scientist, 117(1601), 25 February, 53-58

RISEBOROUGH, D.W., 1989. Computer analysis of Norman Wells pipeline thermal data. Open File Report No.2108, Geological Survey of Canada, Ottawa, Ontario, 64 pp.

RISEBOROUGH, D.W., 1990. Interpreting the climate signal in permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

RISEBOROUGH, D.W. and C.R. BURN, 1988. Influence of an organic mat on the active layer. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 633-638. Reprint Series No.102, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

ROGGENSACK, W.D. and W. WRIGLEY, 1990. Laboratory evaluation of adfreeze bond strength between frozen soil and steel. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

ROOTS, E.F., 1989. Climate change: high-latitude regions. Climatic Change, 15(1-2), October, 223-253

RUDBERG, S., 1988. High Arctic landscapes: comparison and reflexions. Norsk Geografisk Tidsskrift, 42(4), 255-264

RUFFELL, P., T.R. MURPHY and C.A. GRAHAM, 1990. Planning and interpretation of a 500 m corehole through offshore permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

SAINT-ONGE, D.A. and I. McMARTIN, 1989. Geomorphology of arctic glacial landforms and buried glacier ice. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A131

SAINT-ONGE, D.A., I. McMARTIN and R. AVERY, 1989. Rock blisters and other frost-heaved landforms in the Bernard Harbour area, District of Mackenzie, N.W.T. In - Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.89-1D, Ottawa, Ontario, 95-99

SCHMIDLIN, T.W., 1988. Alpine permafrost in eastern North America: a reviev. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 241-246

SCHMIDT, I.H. and S.A. HARRIS, 1990. Permafrost development in peatlands of S.E. Yukon Territory. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

SCHUNKE, E. and S.C. ZOLTAI, 1988. Earth hummocks (thurfur). In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 231-245

SEGO, D.C. and L.B. SMITH, 1989. Effect of backfill properties and surface treatment on the capacity of adfreeze pipe piles. Canadian Geotechnical Journal, 26(4), November, 718-725

SEGUIN, M.K.-, M. ALLARD and E. GAHÉ, 1989. Surface and dovnhole geophysics for permafrost mapping in Ungava, Quebec. Physical Geography, 10(3), 201-232

SEGUIN, M.K.-, M. ALLARD, J. PILON, R. LÉVESQUE and R. FORTIER, 1989. Geophysical detection and characterization of ground ice in northern Quebec. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A76

SEGUIN, M.K.- and J. FRYDECKI, 1988. Gravity determination of the volume ice fraction in discontinuous permafrost. Paper submitted to Geophysical Prospecting.

SEGUIN, M.K. and J. FRYDECKI, 1990. Geophysical detection and possible estimation of ice content in permafrost (northern Quebec). Proceedings, CISM/CGU '90, 83rd CISM Annual Meeting and 11th CGU Annual Meeting, Ottava, Ontario, Canadian Institute of Surveying and Mapping and Canadian Geophysical Union, **-**

SEGUIN, M.-K, E. GAHÉ, M. ALLARD and K. BEN-MIKOUD, 1988. Permafrost geophysical investigation at the nev airport site of Kangiqsualujjuaq, northern Quebec, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 980-987

SEGUIN, M.K. et R. LÉVESQUE, 1990. Détection, par méthodes géophysiques, de sols gélifs à l'emplacement de pistes d'atterrissage au Nunavik. Comptes rendus, 5e Conférence canadienne sur le pergélisol, 6-8 juin 1990, Québec, Québec, **-**

SEPPÄLÄ, M., 1988. Palsas and related forms. In - Advances in Periglacial Hydrology, M.J. Clark (Editor), Wiley-Interscience Publications, John Wiley & Sons, 247-278

SEPPÄLÄ, M., 1988. Rock pingos in northern Ungava Peninsula, Quebec, Canada. Canadian Journal of Earth Sciences, 25(4), April, 629-634

SEPPÄLÄ, M., J. GRAY and J. RICHARD, 1988. The developmnent of depressed-centre ice-wedge polygons in the northernmost Ungava Peninsula, Quebec, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 862-866

SHARPE, D.R., 1989. Map of thermokarst erosion and possible ground ice distribution, southern Victoria Island, N.W.T., Canada. Program with Abstracts, Vol.14, GAC/MAC Joint Annual Meeting, 15-17 May 1989, Montréal, Quebec, Geological Association of Canada and Mineralogical Association of Canada, A90

SHEN, M. and B. LADANYI, 1988. Calculation of the stress field in soils during freezing. Proceedings, 5th International Symposium on Ground Freezing, Nottingham, U.K., Vol.1, 121-127. Reprint Series No.94, Geotechnical Science Laboratories, Carleton University, Ottava, Ontario.

SHEN, M. and B. LADANYI, 1988. Modelling of coupled heat, moisture and stress field in freezing soil. Cold Regions Science and Technology, 14(*), 237-246. Reprint Series No.93, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

SHEN, M. and B. LADANYI, 1989. Numerical solutions for freezing and thaving of soils using boundary-conformaing curvilinear coordinate systems. Proceedings, Frost in Geotechnical Engineering, International Symposium, H. Rathmayer (Editor), 13-15 March 1988, Saariselkä, Finland, VTT Symposium No.94, Technical Research Centre of Finland, Espoo, Vol.1, 391-400

SINHA, A.K., 1988. EM soundings for mapping complex geology in the permafrost terrain of northern Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norvay, Tapir Publishers, Vol.2, 994-999

SLOAN, C.E. and R.O. van EVERDINGEN, 1988. Region 28: Permafrost region. In - The Geology of North America, Vol.O-2, Hydrogeology, W. Back, J.S. Rosensheim and P.R. Seaber (Editors), Geological Society of America, 263-270

SMITH, C.A.S., 1990. Nature of the cryic thermal regime of agricultural soils in the Yukon Territory, Canada. Proceedings, International Symposium, Frozen Soil Impacts on Agricultural, Range, and Forest Lands, K.R. Cooley (Editor), 21-22 March 1990, Spokane, Washington, CRREL Special Report No.90-1, Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, Hanover, New Hampshire, 11-20

SMITH, L.B., W.G. NOTENBOOM, M. CAMPBELL, S. CHEEMA and T. SMYTH, 1989. Pangnirtung water reservoir: geotechnical aspects. Canadian Geotechnical Journal, 26(3), August, 335-347

SMITH, M.W., 1988. The significance of climatic change for the permafrost environment. Permafrost, Fifth International Conference, K. Senneset (Editor), 2-5 August 1988, Trondheim, Tapir Publishers, Vol.3, 18-23

SMITH, M., 1990. Observations and significance of internal pressures in freezing soil. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

SMITH, M.W. and D.E. PATTERSON, 1989. Detailed observations on the nature of frost heaving at a field scale. Canadian Geotechnical Journal, 26(2), May, 306-312

SMITH, M.W. and A.R. TICE, 1988. Measurement of the unfrozen water content of soils: comparison of NMR and TDR methods. CRREL Report No.88-18, Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, Hanover, New Hampshire, October, 11 pp.

SMITH, M.W. and A.R. TICE, 1988. Measurement of the unfrozen water content of soils: a comparison of NMR and TDR methods. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 473-477. Reprint Series No.100, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

SMITH, S.L. and P.J. WILLIAMS, 1988. Water and ice movement in frozen soil. Abstracts, CAGONT Meeting, 15 October 1988, London, ontario, Canadian Association of Geographers,

SMITH, S.L. and P.J. WILLIAMS, 1990. Ice lens distribution and orientation near a buried pipeline. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

SOMR, C.H. and R.H. KING, 1990. Origin of polygonal peat plateaus under conditions of continuous permafrost, Truelove Lowland, Devon lsland, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

STOKER, K.J.L., Jr, 1988. A study of an active layer soil with an unusual thermal regime, near Schefferville, P.Q.: preliminary results. In - Student Research in Canada's North, Proceedings of the National Student Conference on Northern Studies, W. Peter Adams and Peter G. Johnson (Editors), 18-19 November 1986, Ottawa, Ontario, Association of Canadian Universities for Northern Studies, 174-177

STONE, J.R. and G.M. ASHLEY, 1989. Fossil pingos? Nev evidence for active permafrost in southern Nev England during Late Wisconsinan deglaciation. Abstracts with Programs, 21(2), February, 24th Annual Meeting, Northeastern Section, Geological Society of America, 23-25 March 1989, Nev Brunswick, New Jersey, 69

STUART, A., 1989. Recent climate variations in the Mackenzie Valley and their anticipated impact on permafrost stability. In - Program and Abstracts, Atmospheric and Oceanic Hazards: Modeling and Observation, XXIII Annual Congress, 6-9 June 1989, Rimouski, Quebec, Canadian Meteorological and Oceanographic Society, 79

SVEC, O., 1989. A nev concept of frost-heave characteristics of soils. Cold Regions Science and Technology, 16(3), July, 271-279

SVEC, O.J., 1990. Critical segregation potential-frost heave upper limit. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

TARNOCAI, C., 1989. Reviews - Glossary of permafrost and related ground-ice terms. By the Permafrost Subcommittee of the Associate Committee on Geotechnical Research (S.A. Harris, H.M. French, J.A. Heginbottom, G.H. Johnston, B. Ladanyi, D.C. Sego, and R.O. van Everdingen). National Research Council of Canada Technical Memorandum No.142, NRC Report No.27952, Ottawa: National Research Council, 1988. 156 pp., 24 figs., bib. Softbound. Cdn$15.00. (Available in English and French). Arctic, 42(3), September, 289-290

TAYLOR, A., 1988. A constraint to the Wisconsinan glacial history, Canadian Arctic Archipelago. In - Periglacial Phenomena: Ancient and Modern, H.M. French and A.E. Koster (Editors), IGU Commission on the Significance of Periglacial Phenomena, 7-9 August 1987, Ottawa, Ontario, Journal of Quaternary Science, 3(1), 15-18

TAYLOR, A., 1988. Deep ground temperatures in the Canadian Arctic Archipelago: insight into paleogeography and paleoclimate in a permafrost environment. Abstracts for the AGU Fall Meeting, EOS, Transactions, American Geophysical Union, 69(44), 1 November, 1210

TAYLOR, A.E., 1990. Holocene paleoenvironmental reconstruction from deep ground temperatures, Canadian Arctic Archipelago: a comparison with climate inferences from the $\delta^{18}O$ record of ice cores. Proceedings, Symposium on Ice and Climate, 21-25 August 1989, Seattle, Washington, Annals of Glaciology, Vol.14, abstract, 359-360

TAYLOR, A. and A. JUDGE, 1988. Reconstruction of marine transgression history from an offshore ground temperature profile, Esso Angasak L-03 wellsite, Beaufort Sea. In - Current Research Part D, Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.88-1D, Ottawa, Ontario, 137-142. Also - Current Research Part A, Abstracts, Geological Survey of Canada Paper No.88-1A, 59-60

TAYLOR, A. and A. JUDGE, 1988. The terrestrial heat flow, Canadian Arctic Islands: thermal conditions on the eastern boundary of the Canada Basin. Program with Abstracts, GAC-MAC 13th Joint Annual Meeting, Geological Association of Canada, Mineralogical Association of Canada and Canadian Society of Petroleum Geologists, 23-25 May 1988, St. John's, Newfoundland, A123-A124

TAYLOR, A., A. JUDGE and V. ALLEN, 1989. Recovery of precise offshore permafrost temperatures from a deep geotechnical hole, Canadian Beaufort Sea. In - Interior Plains and Arctic Canada, Geological Survey of Canada Paper No.89-1D, Ottawa, Ontario, 119-124

TAZAKI, K., W.S. FYFE and M. IWATSUKI, 1988. Clues to arctic soil erosion from cryo-electron microscopy of smectite. Nature, 333(6170), 19 May, 245-247

THÉRIAULT, A., 1988. Capacité portante des pieux dans le pergélisol. Thèse de doctorat, École Polytechnique, Université de Montréal, Montréal, Québec, 412 pp.

THÉRIAULT, A. and B. LADANYI, 1988. Behaviour of long piles in permafrost. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1175-1180

THÉRIAULT, A. and B. LADANYI, 1990. On the permanence of adfreeze bond for piles in permafrost. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

THIBAUDEAU, P., 1988. Le climat des cavernes Tsi-Tché-Han et Bear Cave, nord du Yukon, Canada. Dans - Les recherches des étudients dans le nord canadien, Actes de la Conférence nationale des étudiants en études nordiques, W. Peter Adams et Peter G. Johnson (éditeurs), 18-19 novembre 1986, Ottawa, Ontario, Association universitaire canadienne d'études nordiques, 177-187

THURBER CONSULTANTS LIMITED, 1989. Mechanical properties of ice and frozen soil. GSC Open File Report No.2122, Geological Survey of Canada, Ottawa, Ontario, 363 pp.

TREMBLAY, C. and G. DORÉ, 1988. Airport network and housing construction programmes in northern Quebec, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1500-1506

Van EVERDINGEN, R.O., 1988. Perennial discharge of subpermafrost groundwater in two small drainage basins, Yukon, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 639-643

van EVERDINGEN, R.O., 1990. Ground-water hydrology. In - Northern Hydrology: Canadian Perspectives, T.D. Prowse and C.S.L. Ommanney (Editors), NHRI Science Report No.1, National Hydrology Research Institute, Environment Canada, Saskatoon, Saskatchewan, 77-101

Van EVERDINGEN, R.O. and L.E. CARLSON, 1988. Development and thaving of ice-rich permafrost around chilled pipelines monitored by resistance gauges. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 1004-1009

Van GASSEN, W. and D.C. SEGO, 1989. Problems with the segregation potential theory. Cold Regions Science and Technology, 17(1), September, 95-97

van LOON, W.K.P., E. PERFECT, P.H. GROENEVELT and B.D. KAY, 1990. Application of time domain reflectometry to measure solute redistribution during soil freezing. Proceedings, International Symposium, Frozen Soil Impacts on Agricultural, Range, and Forest Lands, K.R. Cooley (Editor), 21-22 March 1990, Spokane, Washington, CRREL Special Report No.90-1, Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, Hanover, New Hampshire, 186-194

WALKER, H.J., 1988. Permafrost and coastal processes. Permafrost, Fifth International Conference, K. Senneset (Editor), 2-5 August 1988, Trondheim, Tapir Publishers, Vol.3, 35-42

WANG, B. and H.M. FRENCH, 1990. Permafrost, groundwater hydrology and massive ice lenses, Hualo Basin, Northeast China. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

WASHBURN, A.L., 1989. Near-surface soil displacement in sorted circles, Resolute area, Cornwallis Island, Canadian High Arctic. Canadian Journal of Earth Sciences, 26(5), May, 941-955

WILLIAMS, P.J., 1988. Thermodynamic and mechanical conditions within frozen soils and their effects. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 493-498. Reprint Series No.99, Geotechnical Science Laboratories, Carleton University, Ottawa, Ontario.

WILLIAMS, P.J., 1979. Pipelines and permafrost: science in a cold climate. A Carleton Contemporary No.10, 2nd edition (reprinted), Carleton University Press, Ottawa, Ontario, 129 pp.

WILLIAMS, P.J., 1990. Review - Periglacial morphology. Polar Record, 26(157), April, 131-132

WILLIAMS, P.J. and M.W. SMITH, 1989. The frozen earth: fundamentals of geocryology. Cambridge University Press, Cambridge, U.K., 300 pp.

WILLIAMS, P.J. and S.L. SMITH, 1989. Ice sandvich experiments and the thermodynamic-rheological model of frost heave. Proceedings, 5th International Symposium on Ground Freezing, Ground Freezing 88, R.H. Jones and J.T. Holden (Editors), 26-28 July 1988, Nottingham, U.K., A.A. Balkema, Rotterdam, Vol.2, 579-580

WILLIAMS, R. and D. ROBINSON, 1989. Origin and distribution of polygonal cracking of rock surfaces. geografiska Annaler, 71A(3-4), 145-159

WILSON, C.E. and S. CHEEMA, 1989. Water and sever service connections in permafrost areas of the Northwest Territories. Canadian Journal of Civil Engineering, 16(2), April, 188-196

WOLFE, S.A. and L.D. DYKE, 1990. Porewater salinitics of beach sediments North Head, Richards Island, N.W.T. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

WOO, M.-K., 1988. Wetland runoff regime in northern Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.1, 644-649

WOO, M.-K., 1989. Consequences of climatic change for hydrology in permafrost zones. Workshop on Climatic Change and Permafrost: Significance to Science and ngineering, Committee on Permafrost, National Academy of Sciences, Preprint Volume, 51-54

WOO, M.-K., 1990. Permafrost hydrology. In - Northern Hydrology: Canadian Perspectives, T.D. Prowse and C.S.L. Ommanney (Editors), NHRI Science Report No.1, National Hydrology Research Institute, Environment Canada, Saskatoon, Saskatchewan, 63-76

WOO, M.-K. and J.J. DRAKE, 1988. A study to model the effects of uranium mine tailings on a permafrost environment. Northern Affairs Program, Report No.53, Indian and Northern Affairs Canada, Ottawa, Ontario, 41 pp.

WOO, M.-K. and P. MARSH, 1990. Response of soil moisture change to hydrological processes in a continuous permafrost environment. 8th International Northern Research Basins Symposium and Workshop, 26-30 March 1990, Abisko, Sweden, Water Resources Engineering, Luleå University of Technology, 28 pp. To be published in Nordic Hydrology

WOO, M.-K. and K.L. YOUNG, 1990 Thermal and hydrological effects of slope disturbances in a continuous permafrost environment. Proceedings, 5th Canadian Permafrost Conference, 6-8 June 1990, Québec, Quebec, **-**

YOUNG, S. and A.S. JUDGE, 1988. Canadian permafrost distribution and thickness data collection: a discussion. In - Student Research in Canada's North, Proceedings of the National Student Conference on Northern Studies, W. Peter Adams and Peter G. Johnson (Editors), 18-19 November 1986, Ottawa, Ontario, Association of Canadian Universities for Northern Studies, 223-229

YOUSSEF, H. and F.H. SAYLES, 1988. Classification and laboratory testing of artificially frozen ground: discussion and reply. Journal of Cold Regions Engineering, 2(3), September, 137-140

APPENDIX

CURRENT PERMAFROST RESEARCH

Organization and Address Centre d'Études nordiques, Université Laval, Cité universitaire, Ste-Foy (Québec), G1K 7P4	**Tel.No.** 418-656-2196
Department/Branch Géographie	**FAX No.** 418-656-2603

Researchers

M. Allard, M.K.- Seguin and Y. Begin

Project Title Géomorphologie et régime thermique du pergélisol au Quebec nordique - 1989	**Status** **New** [ ] **Ongoing** [X] **Completed** [ ]

Objectives

To model the development of permafrost in northern Quebec by identifying the controlling factors and their respective roles.

Methods

Lab [ ] **Field** [X] **Modelling** [X] **Others**

Findings

The thermal gradient in the permafrost mirrors the development of the forest cover from the coast into the interior, reflecting its influence on snov accumulation. It supports the model of the dynamic evolution of river ecosystems from - emersion, through aggradation of permafrost, to development of permafrost and then to thermokarst.

Publications

Allard, M., M.-K. Seguin et Y. Begin, 1989. Morphologie et régime thermique d'un plateau de pergélisol côtier, détroit de Manitounuk, Québec nordique. Recueil des résumés de communications, 57e congrès de l'Association canadienne française pour l'avancement des sciences, 15-19 mai 1989, Montréal, Québec, Annales de l'ACFAS, Vol.57, 176

Organization and Address Department of Geography, Univ. of British Columbia, 1984 West Mall, Vancouver, B.C., V6T 1W5	**Tel.No.** 604-228-2985
Department/Branch Geography	**FAX No.** 604-228-6150

Researchers

C.R. Burn

Project Title **Thermal and Hydrological Investigations of Permafrost**	**Status** **New** [ ] **Ongoing** [X] **Completed** [ ]

Objectives

Field study of the hydrology of frost heave.

Methods

Lab [X] **Field** [X] **Modelling** [X] **Others**

Findings

Field studies are in progress. Publication will be by 1992.

Publications

Burn, C.R., 1990. Implications for palaeoenvironmental reconstruction of recent ice-wedge development at Mayo, Yukon Territory. Permafrost and Periglacial Processes, 1(1), 3-14

Organization and Address	Tel.No.
National Hydrology Research Institute, 11, Innovation Blvd, Saskatoon, Saskatchewan, S7N 3H5	306-975-5749
Department/Branch Hydrological Sciences Division	FAX No. 306-975-5143

Researchers

John Kwong and Michael Griffin

Project Title	Status
Ground Water in the Permafrost Environment	New [ ] Ongoing [X] Completed [ ]

Objectives

Instrument and carry out field measurements at the two Alberta study sites. Monitor ground-temperature profiles in northern Prairies and southern N.W.T.

Methods

Lab [X] Field [X] Modelling [X] Others

Findings

A preliminary survey of frozen ground along saskatchevan hwy 155 to cluff lake and n.w.t. highways 2 (hay river to fort providence) and 3 (fort providence to rae) was conducted. spring water sampling for the two alberta study sites was completed and the thickness of ground cover at the meander river site was measured. a brief survey of permafrost along the northern part of the mackenzie highway confirmed observations made last year.

Publications

Kwong, Y.T.J., D. Craig and M. Griffin, 1990. Hydrogeochemical aspects of two selected sites in a fringe zone of discontinuous permafrost and their implications. Proceedings, Northern Hydrology Symposium, T.D. Provse and C.S.L. Ommanney (Editors), 10-12 July 1990, Saskatoon, Saskatchevan

Organization and Address Land Resource Science, Ontario Agricultural College, University of Guelph, Guelph, Ontario, N1G 2W1	Tel.No. 519-824-4120
Department/Branch Land Resource Science	FAX No. 519-824-5730

Researchers

E. Perfect, B.D. Kay and P.H. Groenevelt

Project Title **Hydrological Properties of Frozen Porous Media**	Status New [ ] Ongoing [X] Completed [ ]

Objectives

Investigate the transport of soil water under frozen conditions. Review methods of measuring the hydrological properties of frozen porous media.

Methods

Lab [ ] **Field** [ ] **Modelling** [X] **Others** Theoretical, Literature Review

Findings

Water can occur as gas (water vapour), liquid (unfrozen water) and/or solid (ice) in soil pores. The energy status and amount of water remaining unfrozen are crucial to the hydrological properties of frozen porous media. Changes in the energy status of unfrozen water can be predicted with the Clapeyron equation. Methods of measuring the unfrozen water content and hydraulic conductivity of frozen soils are reviewed.

Publications

Perfect, E. and B.D. Kay, 1990. Hydrological properties of frozen soil. In - Manual of Soil Sampling and Methods of Analysis, M.R. Carter (Editor), 3rd Edition, Canadian Soil Science Society (in review).

Organization and Address Department of Geography, McGill University, 805 Sherbrooke Street West, Montréal (Québec), H3A 2K6	Tel.No.
Department/Branch Geography	FAX No.

Researchers

Wayne H. Pollard

Project Title Permafrost and Ground Ice Investigations in the Yukon Coastal Plain	Status New [ ] Ongoing [X] Completed [ ]

Objectives

Methods
Lab [ ] Field [ ] Modelling [ ] Others

Findings

Publications

Organization and Address	Tel.No.
National Hydrology Research Institute, 11, Innovation Blvd, Saskatoon, Saskatchewan, S7N 3H5	306-975-5749
Department/Branch Hydrological Sciences Division	**FAX No.** 306-975-5143

Researchers

T.D. Prowse, H.D. Craig and P. Marsh

Project Title	Status
Hydrology of Northern Wetlands	**New** [ ] **Ongoing** [X] **Completed** [ ]

Objectives

Select and instrument basin suitable for studying climatic warming and melt-out of permafrost. Evaluate models for predicting run-off from basin.

Methods

Lab [ ] **Field** [X] **Modelling** [X] **Others**

Findings

Manners Creek, near Fort Simpson, N.W.T., was selected as a suitable research basin. Water samples and detailed sediment cores were collected. Access trails and helipads were cut. Shallow test wells were installed into the active layer and samples collected. Water chemistry samples were collected from icings, ground-water seeps and under ice streamflow. A snow survey was carried out and snow chemistry samples collected.

Publications

Craig, D., 1990. Geochemical Evolution of water in a continental high boreal wetland: preliminary results. Proceedings, Northern Hydrology Symposium, T.D. Prowse and C.S.L. Ommanney (Editors), 10-12 July 1990, Saskatoon, Saskatchewan, **-** [CS-90007]

Organization and Address Département de géologie, Université Laval, Cité universitaire, Sainte-Foy (Québec), G1K 7P4	**Tel.No.** 418-656-2196
Department/Branch Département de géologie	**FAX No.** 418-656-2603

Researchers

Maurice K.- Seguin

Project Title **Estimation du contenu en glace dans le pergélisol à l'aide de méthodes géophysique**	**Status** **New** [ ] **Ongoing** [X] **Completed** [ ]

Objectives

Le but principal est d'estimer l'excès de glace dans des buttes pergélisolées contenant de la glace lenticulaire ou poreuse.

Methods

Lab [ ] **Field** [X] **Modelling** [X] **Others**

Findings

L'intégration des méthodes géophysiques de surface incluent la gravimétrie, la résistivité électrique, la polarisation provoquée et la géothermie. La conjonction de fortes anomalies de résistivité électrique, de faibles intensités gravimétriques et de chargeabilités de polarisation provoquée quasi-nulles permet de cibles les volumes contenant des excès de glace. La modélisation du champ gravimétrique permet de déterminer la géométrie et le pourcentage de l'excès de glace.

Publications

Seguin, M.K.-, M. Allard and E. Gahé, 1989. Surface and downhole geophysics for permafrost mapping in Ungava, Quebec. Physical Geography, 10(3), 201-232

Organization and Address Département de géologie, Université Laval, Cité universitaire, Sainte-Foy (Québec), G1K 7P4	**Tel.No.** 418-656-2196
Department/Branch Département de géologie	**FAX No.** 418-656-2603

Researchers

Maurice K.- Seguin

Project Title **Études géophysiques du pergélisol dans les infrastructures aéroportuaires du Nouveau Québec**	**Status** **New** [ ] **Ongoing** [X] **Completed** [ ]

Objectives

Les objectifs de cette étude consistent à déterminer les aires favorables à l'installation de sites aéroportuaires en milieu pergélisolé souvent riche en lentilles de glace.

Methods

Lab [ ] **Field** [X] **Modelling** [X] **Others**

Findings

Les méthodes géophysiques incluent la résistivité électrique, la polarisation, la sismique-réfraction, l'électromagnétisme, le géoradar et la géothermie. Ces méthodes permettent de déterminer la profondeur du roc, la stratigraphie des matériaux non consolidés, l'épaisseur du mollisol et du pergélisol et enfin les zones riches en glace.

Publications

Seguin, M.K.-, E. Gahé, M. Allard and K. Ben-Miloud, 1988. Permafrost geophysical investigation at the new airport site of Kangiqsualujjuaq, northern Quebec, Canada. Proceedings, 5th International Conference on Permafrost, K. Senneset (Editor), 2-5 August 1988, Trondheim, Norway, Tapir Publishers, Vol.2, 980-987

Organization and Address	Tel.No.
Land Resource Science, Ontario Agricultural College, University of Guelph, Guelph, Ontario, N1G 2W1	519-824-4120
Department/Branch Land Resource Science	**FAX No.** 519-824-5730

Researchers

W.K.P. Van Loon, E. Perfect, B.D. Kay and P.H. Groenevelt

Project Title	Status	
Redistribution of Water and Solutes by Ground Freezing	**New**	[ ]
	Ongoing	[ ]
	Completed	[X]

Objectives

Apply time domain reflectometry (TDR) to measure soil bulk electrical conductivity (BEC) during freezing. Relate changes in BEC to the freezing-induced redistribution of solutes.

Methods

Lab [X] **Field** [ ] **Modelling** [ ] **Others** Theorectical

Findings

Time domain reflectometry (TDR) can be used to measure the unfrozen water content and bulk electrical conductivity (BEC) under frozen conditions. The BEC depends upon the solute concentration, unfrozen water content and temperature. After corrections were applied for the temperature and unfrozen water content it was possible to identify increases in BEC associated with solute redistribution. These solute peaks appeared to move faster than the 0°C isotherm, suggesting a density-driven fingering process.

Publications

Van Loon, W.K.P., E. Perfect, P.H. Groenevelt and B.D. Kay, 1990. Application of time domain reflectometry to measure solute redistribution during soil freezing. CRREL Special Report No.90-1, Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers, Hanover, New Hampshire, 186-194